

# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 29 Jan 96	3. REPORT TYPE AND DATES COVERED FINAL- 01 JUL 92 TO 30 JUN 95
----------------------------------	-----------------------------	---

4. TITLE AND SUBTITLE

FLAMMABILITY AND KINETIC ANALYSIS OF THE DRY CARBON MONOXIDE FLAME

5. FUNDING NUMBERS

F49620-92-J-0397  
2304/BS 61102F

6. AUTHOR(S)

DR RICHARD TAM

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

INDIANA UNIVERSITY-PURDUE UNIVERSITY AT INDIANAPOLIS  
DEPARTMENT OF MATHEMATICAL SCIENCES  
402 N. BLACKFORD STREET  
INDIANAPOLIS, INDIANA 46202-3216

AFOSR-TR-96

COCA5

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

AFOSR/NM  
110 DUNCAN AVE, SUITE B115  
BOLLING AFB DC 20332-0001

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

F49620-92-J-0397

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION AVAILABILITY STATEMENT

**INFORMATION STATEMENT A**  
Approved for public release  
Distribution Unrestricted

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 300 words)

Preliminary studies on a simplified kinetic model for the hydrogen flame confirm the existence of the shock-like structure in flame temperture space for the logarithm of the mass burning rate that had been discovered previously in the study of the carbon monoxide flame; notably; the mass buring rate undergoes a multiplicative jump in contrast to the additive jump in regualr shock waves.

19960320 060

14. SUBJECT TERMS

15. NUMBER OF PAGES

16. PRICE CODE

17. SECURITY CLASSIFICATION OF THIS REPORT

18. SECURITY CLASSIFICATION OF THIS ABSTRACT

19. SECURITY CLASSIFICATION ON THIS PAGE

20. LIMITATION OF ABSTRACT

UNCLASSIFIED

UNCLASSIFIED

UNCLASSIFIED

UNCLASSIFIED

INDIANA UNIVERSITY  
PURDUE UNIVERSITY  
INDIANAPOLIS

Dept of Mathematical Sciences  
Indiana University-  
Purdue University at Indianapolis  
Indianapolis IN 46202  
Dec 13, 1995

SCHOOL OF SCIENCE



Grant Administration Division  
AFOSR  
Bolling Air Force Base DC 20332

To whom it may concern

Enclosed please find the technical report for  
Grant #F49620-92-J-0397 covering research  
activities during the period June 1, 1994 -  
May 31, 1995.

*Richard Y. Tam*  
Richard Y. Tam  
Associate Professor,  
Mathematical Sciences

DEPARTMENT OF  
MATHEMATICAL SCIENCES

402 N. Blackford Street  
Indianapolis, Indiana  
46202-3216

317-274-6918  
Fax: 317-274-3460

cc P. McKeough

A handwritten signature in black ink, appearing to read "Richard Y. Tam".

INDIANA UNIVERSITY  
PURDUE UNIVERSITY  
INDIANAPOLIS

Technical Report 6/1/94 - 5/31/95  
Grant #F49620-92-J-0397

SCHOOL OF SCIENCE



Preliminary studies on a simplified kinetic model for the hydrogen flame confirm the existence of the shock-like structure in flame temperature space for the logarithm of the mass burning rate that had been discovered previously in the study of the carbon monoxide flame; notably, the mass burning rate undergoes a multiplicative jump in contrast to the additive jump in regular shock waves.

There are no publications during this period.

Manuscript "Flammability and Kinetic Analysis of the Dry Carbon Monoxide Flame" is reorganized into two sections for submittal.

DEPARTMENT OF  
MATHEMATICAL SCIENCES

402 N. Blackford Street  
Indianapolis, Indiana  
46202-3216

317-274-6918  
Fax: 317-274-3460